DYNAMIC OVERLOAD CONTROL CIRCUIT SD-27970-01

TESTS

NO. 5 CROSSBAR OFFICES

1. GENERAL

PAGE

1.01 This section provides a method of checking the dynamic overload control circuit (DOC) SD-27970-01, located in No. 5 crossbar offices. This circuit is used for controlling route transfers in either all electromechanical switching entities or in mixed switching entities consisting of both electromechanical and No. 1 ESS entities.

1.02 The reasons for reissuing this section are listed below. Since this reissue is a general revision, no revision arrows have been used to denote significant changes. This reissue affects Equipment Test Lists.

    (a) To revise Test A to include methods for testing No. 1 ESS switching entities and to delete the cross detection portion of the test.

    (b) To add Test C to provide a separate cross detection test used only in electromechanical switching entities.

    (c) To make minor changes as required.

1.03 The tests covered are:

PAGE

A. Seizure and Route Transfer:
This test checks that: (1) The DOC will respond to a maximum of 30 incoming signals from a controlling toll or crossbar tandem switching center. (2) Each incoming signal is repeated to a maximum of eight switching entities including a maximum of five electromechanical and three No. 1 ESS entities in the same wire center. (3) When the DOC is arranged to serve No. 1 ESS CENT-6 entities, the ETM1

timer operates in 1.5 seconds after an interruption in the incoming signal is detected. 2

B. Timing: This test checks that: (1) An incoming signal which persists for more than 31 to· 38 seconds will be removed from all associated switching entities. (2) Light the DOC lamp at the unit and sound a major alarm. . . 6

C. Cross Detection: This test checks that when a C_ lead becomes falsely grounded, a lamp indication and a major alarm will be originated at an associated electromechanical switching entity. . 6

1.04 Table A provides the following information:

    (a) The maximum number of switching entities in the same wire center that can be served, ranging from four to eight, depending on the types of these entities.

    (b) The contact numbers on the RTC1(_) relay controlling the route transfer signals to particular switching entities are shown in parentheses in Columns 1 through 13.

1.05 Test A requires action and verification at particular electromechanical or No. 1 ESS switching entities.

1.06 The controlling toll or crossbar switching office must be notified prior to performing these tests.

1.07 *Lettered Steps:* A letter a, b, c, etc, added to a step number in Part 3 of this section indicates an action which may or may not be required depending on local conditions. The condition under which a lettered step or a series of lettered steps should be made is given in the ACTION column, and all steps governed by the same condition are designated by the same letter within a test. Where a condition does not apply, all steps designated by that letter should be omitted.

3. METHOD

A. Seizure and Route Transfer

STEP	ACTION	VERIFICATION
	Note: See paragraphs 1.04 through 1.07.	

Electromechanical Switching Entities

STEP	ACTION	VERIFICATION
1	At DOC— Block nonoperated RTC1_ relay associated with route under test.	
2a	If route under test does not require E&M signaling and N option is provided— Insulate contact 8M of associated RTC_ relay.	
3b	If route under test requires E&M signaling and M option is provided— Insulate contact 12M of associated RTC1_ relay.	
4	Insulate make contacts of associated RTC1_ relay for all equipped switching entities except for particular electromechanical entity to be used for test. (Refer to paragraph 1.04.)	
5	Block operated associated RTC_ relay.	
6	Remove blocking tool from associated RTC1_ relay placed in Step 1.	If particular switching entity is arranged for No. 1 XBR— At miscellaneous circuit for trouble indicator frame, originating— RTCA_ lamp lighted. If particular switching entity is arranged for No. 5 XBR— At master test frame jack, lamp, and key circuit— RTCA_ lamp lighted. If particular switching entity is arranged for panel— At route transfer control circuit— RTCA_ lamp lighted.
7	At DOC— Remove blocking tool from RTC_ relay placed in Step 5.	RTCA_ lamp lighted in Step 6 extinguished.

STEP	ACTION	VERIFICATION
8	Block nonoperated associated RTC1_ relay.	
9	Repeat Steps 4 through 8 for each remaining electromechanical switching entity associated with route under test.	
10c	If route under test is arranged for all electromechanical switching entities— Remove insulator from RTC_ or RTC1_ relay placed in Step 2a or 3b.	
11c	Remove insulators from RTC1_ relay placed in Step 4.	
12c	Remove blocking tool from RTC1_ relay placed in Step 8.	
13c	Repeat Steps 1 through 12c for each remaining route to be tested.	

No. 1 ESS Switching Entities—Generic Program CNTX-6 Or Later

STEP	ACTION	VERIFICATION
14d	If route under test is arranged for mixed switching entities and No. 1 ESS with generic program *CNTX-6 or later* is provided— Insulate make contacts of associated RTC1_ relay for all equipped switching entities except for particular No. 1 ESS entity to be used for test. (Refer to paragraph 1.04.)	
15d	Remove blocking tool from associated RTC1_ relay placed in Step 8.	
16d	At maintenance TTY for particular switching entity— Request attendant to type in "PP-EXC-aa" for preprogram to be tested. (aa = preprogram No.).	At maintenance and network management TTY(s)— "PF" followed by "NM07" message printed ("NM01" printed if request is manual control).
17d	At DOC— Momentarily operate associated RTC1_ relay.	RTC7_, RTC8_ relays momentarily operated. RTC9_ relay operated. In about 1.5 seconds— ETM1_ relay momentarily operated. RTC9_ relay released.
18d	Momentarily operate associated TM_ relay.	TM2_ relay momentarily operated.
19d	At maintenance TTY for particular switching entity— Request attendant to type in "T-SCAN-PM,	At maintenance and network management TTY(s)— "PF" followed by "TW03" message printed.

STEP	ACTION	VERIFICATION
	xxx, yy, zz" to read supervisory and directed scan points.	Output message indicates status of scan points.
20d	At DOC— Block operated associated RTC7_ relay.	RTC8_ relay operated.
21d	At maintenance TTY for particular switching entity— Request attendant to type in "T-SCAN-PM, xxx, yy, zz" to read supervisory and directed scan points.	At maintenance and network management TTY(s)— "PF" followed by "TW03" message printed. Output message indicates status of scan points.
22d	Request attendant to type in "PP-REM-aa" to remove message typed in at Step 16d.	At maintenance and network management TTY(s)— "PF" followed by "NM07" message printed. printed.
23d	Request attendant to type in "PP-STATUS-aa."	"PF" followed by "NM02" message printed. Output message indicates that preprogram under test is automatically activated.
24d	At DOC— Block operated associated TM2_ relay.	
25d	At maintenance TTY for particular switching entity— Request attendant to type in "PP-STATUS-aa."	"PF" followed by "NM02" message printed. Output message indicates that preprogram under test is no longer automatically activated.
26d	Remove blocking tool from RTC7_ relay placed in Step 20d.	
27d	Remove blocking tool from TM2_ relay placed in Step 24d.	
28d	Repeat Steps 14d through 27d for each remaining No. 1 ESS switching entity associated with route under test.	
29d	Remove insulators from RTC_ or RTC1_ relay placed in Step 2a or 3b.	
30d	Remove insulators from RTC1_ relay placed in Step 14d.	
31d	Repeat Steps 1 through 30d for each remaining route to be tested.	

No. 1 ESS Switching Entities—Generic Program Preceding CNTX-6

| 32e | If route under test is arranged for mixed switching entities and No. 1 ESS with generic | |

STEP	ACTION	VERIFICATION
	program *preceding CNTX-6* is provided— Insulate make contacts of associated RTC1_ relay for all equipped switching entities except for particular No. 1 ESS entity to be used for test. (Refer to paragraph 1.04.)	
33e	Remove blocking tool from associated RTC1_ relay placed in Step 8.	
34e	At maintenance TTY for particular switching entity— Request attendant to type in "PP-EXC-aa" for preprogram to be tested. (aa = preprogram No.).	At maintenance and network managment TTY(s)— "PF" followed by "NM07" message printed ("NM01" printed if request is manual control.).
35e	At DOC— Momentarily operate associated RTC1_ relay.	
36e	At maintenance TTY for particular switching entity— Request attendant to type in "T-SCAN-PM, xxx, yy, zz" to read scan points.	At maintenance and network management TTY(s)— "PF" followed by "TW03" message printed. Output message indicates status of scan points.
37e	At DOC— Block operated associated RTC1_ relay.	
38e	At maintenance TTY for particulr switching entity— Request attendant to type in "T-SCAN-PM, xxx, yy, zz" to read scan points.	At maintenance and network management TTY(s)— "PF" followed by "TW03" message printed. Output message indicates status of scan points.
39e	Request attendant to type in "PP-REM-aa" to remove message typed in at Step 34e.	At maintenance and network management TTY(s)— "PF" followed by "NM07" message printed.
40e	Request attendant to type in "PP-STATUS-aa."	"PF" followed by "NM02" message printed. Output message indicates that preprogram under test is automatically activated.
41e	At DOC— Block operated associated TM_ relay.	
42e	At maintenance TTY for particular switching entity— Request attendant to type in "PP-STATUS-aa."	"PF" followed by "NM02" message printed. Output message indicates that preprogram under test is no longer automatically activated.
43e	Remove blocking tool from RTC1_ relay placed in Step 37e.	
44e	Remove blocking tool from TM_ relay placed in Step 41e.	

STEP	ACTION	VERIFICATION
45e	Repeat Steps 32e through 44e for each remaining No. 1 ESS switching entity associated with route under test.	
46e	Remove insulator from RTC_ or RTC1_ relay placed in Step 2a or 3b.	
47e	Remove insulators from RTC1_ relay placed in Step 32e.	
48e	Repeat Steps 1 through 13c and 32e through 47e for each remaining route to be tested.	

B. Timing

Note: See paragraphs 1.04 through 1.07.

1	At DOC— Insulate 2B, 4B, 8B, 10B, and 11B of TM_ relay associated with route under test.	
2	Block operated RTC1_ relay associated with route under test; *start timing.*	In 31 to 38 seconds— TM_ relay operated. ***Restart timing.*** In 13 to 32 seconds— DOC lamp lighted. Major alarm sounded.
3	Remove blocking tool from RTC1_ relay.	
4	Momentarily operate DOC-AR key.	DOC lamp extingished. Major alarm silenced.
5	Remove insulators from TM_ relay placed in Step 1.	
6	Repeat Steps 1 through 5 for each remaining equipped route to be tested.	

C. Cross Detection

Note: See paragraphs 1.04 through 1.07.

Electromechanical Switching Entities Only

1	At DOC— Block nonoperated RTC1_relay associated with route under test.	
2	Using 67C test set, momentarily apply ground to fixed contact of RTC1_ relay associated with particular electromechanical switching	If particular switching entity is arranged for No. 1 XBR— At miscellaneous circuit for trouble indicator

STEP	ACTION	VERIFICATION
	entity. Refer to paragraph 1.04).	frame, originating— RTCA_ lamp momentarily lighted. RTCX_ lamp lighted. Major alarm sounded. If particular switching entity is arranged for No. 5 XBR— At master test frame jack, lamp, and key circuit— RTCA_ lamp momentarily lighted. RTCX_ lamp lighted. Major alarm sounded. If particular switching entity is arranged for panel— At route transfer control circuit— RTCA_ lamp momentarily lighted. RTCX_ lamp lighted. Major alarm sounded.
3	Momentarily operate RT-AR key.	RTCX_ lamp extinguished. Major alarm silenced.
4	Repeat Steps 1 through 3 for each remaining electromechanical switching entity associated with route under test.	
5	Remove insulators from RTC1_ relay placed in Step 2.	
6	Remove blocking tool from RTC1_ relay placed in Step 1.	
7	Repeat Steps 1 through 6 for each remaining route to be tested.	

TABLE A

TYPE OF SWITCHING ENTITY		ALL ELECTRO-MECHANICAL	MIXED (*) ELECTROMECHANICAL & NO. 1 ESS CNTX-6			MIXED (**) ELECTROMECHANICAL & NO. 1 ESS CNTX-6			MIXED (*) ELECTROMECHANICAL & NO. 1 ESS (CNTX-6 & PRE-CNTX-6)					
COLUMN NO.		1	2	3	4	5	6	7	8	9	10	11	12	13
Electro-mechanical (CSBR No. 1, CSBR No. 5, or Panel)		1(11)	1(11)	1(11)	1(11)	1(11)	1(11)	1(11)						
		2(10)	2(10)	2(10)	2(10)	2(10)	2(10)	2(10)						
		3(9)	3(9)	3(9)										
		4(7)	4(7)	4(7)		3(7)	3(7)	3(7)	1(7)	1(7)	1(7)			
		5(4)	5(4)			4(4)			2(4)					
		6(3)	6(3)			5(3)	4(3)	4(3)	3(3)	2(3)	2(3)	1(3)	1(3)	
		7(2)				6(2)	5(2)		4(2)	3(2)		2(2)		
		8(1)				7(1)	6(1)	5(1)	5(1)	4(1)	3(1)	3(1)	2(1)	1(1)
No. 1 ESS (CNTX-6 or Later)			7(2,1)	5(4,3)	3(9,7)				6(11,10)	5(11,10)	4(11,10)	4(11,10)	3(11,10)	2(11,10)
				6(2,1)	4(4,3)							5(9,7)	4(9,7)	3(9,7)
					5(2,1)									4(4,3)
No. 1 ESS (PRE-CNTX-6)						8(9)	7(9)	6(9)	7(9)	6(9)	5(9)	6(4)	5(4)	5(2)
							8(4)	7(4)		7(4)	6(4)		6(2)	
								8(2)			7(2)			

* Dynamic overload control circuit mounted in electromechanical or No. 1 ESS-CNTX-6 entity.

** Dynamic overload control circuit mounted in electromechanical entity.